Meyer, Zürich; Prof. L. Rütimeyer, Basle; Prof. H. Strasser, Berne; Prof. Otto Mohr, Dresden; and Prof. Albert Heim, of Zürich, representing the Committee offering the prize.

Art. 3. The judges are authorized to award a first prize of two thousand francs; and a further sum of one thousand francs is placed at their disposal for distribution in minor prizes according to their discretion.

Art. 4. The work awarded the first prize becomes the property of the Foundation of Schnyder of Wartensee, which will arrange with the author regarding the publication of the same.

Art. 5. Each competing work must bear on the title-page a distinguishing motto, and must be accompanied by a sealed envelope containing the name of the author, and bearing on the outside the same motto.

Art. 6. Competing works are to be sent in by the date named in Art. 1, to the following address: "An das Präsidium des Conventes der Stadtbibliothek in Zürich (betreffend Preisaufgabe der Stiftung von Schnyder von Wartensee für 1890)."

NOTES.

THE death of Sir Henry Maine, F.R.S., has created a great blank in the serious literature of England. He was the first Englishman who applied to the study of law and early institutions the rigid methods of science, and the results at which he arrived marked an epoch in the investigation of these subjects. His literary style, combining as it did extraordinary vigour, lucidity, and grace, was scarcely less remarkable than his grasp of far-reaching principles. He died suddenly, of apoplexy, at Cannes, on Friday evening last. He was in his sixty-sixth year.

IN a letter received from Mr. John Whitehead, dated Labuan December 13, 1887, that gentleman writes:—"To-day or to morrow I start for Kina Balu, and I hope to make this a famous and last expedition into Borneo, for I really am in wonderful health considering everything, but at the same time I am rather tired of Borneo, with its fevers, heat, and mosquitoes. I hope to be back in England in August and September. I do not like to brag of what I hope to do, as things are so uncertain. Natives may refuse to help me, and may perhaps attack me, for the country round this fine mountain is by no means settled." On the last occasion of his visiting Kina Balu a year ago, Mr. Whitehead was only able to remain a month upon the mountain, but he discovered nineteen new species of birds in that short time, some of them being really wonderful novelties. He now hopes to remain for at least six months, and this he will doubtless be able to do, if he can secure supplies for his hunters, and keep open his communication with Labuan.

MR. WHITEHEAD'S collections from the island of Palawan have now arrived in this country, and a brief account of them will appear in the April number of the *Ibis*. This island has already been visited by Prof. Steere, Mr. Alfred Everett, and Mr. E. Lemprière, all of whom made collections in the neighbourhood of Puerto Princesa. Mr. Whitehead's labours were also confined to the vicinity of this post, as he was prevented from visiting the interior. He has succeeded, however, in procuring specimens of every species met with by the three travellers above-mentioned, and has besides obtained about sixty additional species, several being new to science.

THE Council of the Royal Meteorological Society have arranged to hold, at 25 Great George Street, Westminster, on March 20–23 next, an Exhibition of Apparatus connected with Atmospheric Electricity, including lightning-conductors, photographs of lightning, and damaged objects. The Committee will also be glad to show any new meteorological instruments or apparatus invented or first constructed since last March; as well as photographs and drawings possessing meteorological interest.

A FRIENDLY meeting of employers and working men, to discuss the best means of obtaining technical education, will be held at the Royal Victoria Hall, Waterloo Bridge Road, on Wednesday, February 15, at eight o'clock. The chair will be taken by Sir Douglas Galton. This meeting has been arranged in consequence of the great interest shown in a similar meeting held at the same place on December 14. The speakers will be limited to ten minutes, and those who wish to speak must send in their names the day before the meeting.

THE new American Folk-Lore Society was definitely organized at a meeting held at Harvard College on January 4. The object of the Society is the study of folk-lore in general, and especially of folk-lore in North America. The first President is Prof. F. J. Child, of Harvard, and the acting Secretary is Mr. W. W. Newell, of Cambridge, Mass. It is expected that the first number of the Society's journal will be published in April.

THE Duchess of Albany has become Patroness of the Parkes Museum, of which the Duke of Albany was President until his death.

DURING the coming spring the construction of the North Sea and Baltic Canal will be begun along the whole line. There will be seven camps of workmen, and 4000 men employed.

THE Education Department of Scotland has issued a circular to the various School Boards in that country, in which are embodied the results of the careful inquiries that have recently been made into the existing system of elementary scientific teaching in Scottish schools. Technical instruction is discouraged in primary schools till the boys have reached the higher standards, and even then, the Department thinks, no attempt should be made unless skilled teachers and abundance of scientific apparatus are available. In most instances the thorough teaching of elementary science is beyond the reach of the primary schools; but by various School Boards uniting to employ a trained staff of teachers much of the difficulty will be overcome. School Boards are also recommended to seek the aid of local committees consisting of manufacturers who know what technical education is most needed in the district. The Department also recommends the extension of the system of giving evening lectures, which have been so successful in the past, and the charging of fees low enough to be within the reach of all. Nothing would tend to make technical education more popular than a small rate of charge, combined, as it should always be, with trained help and an abundant supply of scientific instruments.

A STRIKING new experiment, exhibiting the terribly explosive nature of chloride of nitrogen, is described by Prof. Victor Meyer in the current number of the *Berichte*. A few drops of the yellow chloride were prepared in the usual manner by inverting an exceptionally thin flask filled with chlorine gas in a leaden dish containing a solution of ammonium chloride. Instead, however of gently agitating the apparatus so as to cause the drops to fall into a smaller leaden capsule placed beneath the mouth of the flask, they were allowed to float freely upon the surface. The whole apparatus was then inclosed in a cover-box fitted with stout plate-glass sides, through the top of which was passed a bent pipette, turning up below just under the mouth of the flask and connected outside with a dropping funnel containing chloride of ammonium solution and a few drops of turpentine. When sufficient chloride of nitrogen had collected, the tap of the funnel was carefully turned so as to allow a little turpentine to slowly rise in the flask. After a moment or two it reached the surface and mingled with the chloride of nitrogen, causing a brilliant flash of light and a loud explosion, which Prof. Meyer likens to a thunder-clap, so much more powerful is the detonation in a confined space. The flask of course was shattered, not into powder, but into tolerably large fragments; the plate-glass box, however, even after many repetitions of the experiment, remained intact, a small door on the side away from the observers having been left ajar so as to prevent any notable increase of pressure. Curiously, the chloride of nitrogen never entirely exploded; a part remained in the distorted leaden dish and maintained an incessant fusillade for more than a minute.

AT the last meeting of the Göttingen Chemical Society, Dr. Gattermann read a preliminary note upon his recent researches as to the nature of chloride of nitrogen. From his analyses it appears pretty clear that the yellow liquid is a mixture of at least two distinct chlorides, which he has hopes of being able to separate. During the course of the experiments the reason of its capricious behaviour, the cause of so many painful accidents in the past, was happily discovered. It is decomposed by the actinic rays of light, being rapidly acted upon by sunlight with periodic spontaneous explosion, and is at once fired by exposure to the rays of burning magnesium. Hence further light upon this difficult and dangerous subject can only emanate from the dark room, a paradox the truth of which Dr. Gattermann is endeavouring to demonstrate.

ON the morning of Tuesday, January 31, a distinct shock of earthquake is said to have been felt near Birmingham. In and around Coventry, too, several persons say that they experienced sensible vibrations of their houses and heard rumbling noises. At Hartshill the ceiling of a house was cracked by the shock. On Thursday, February 2, a sharp shock of earthquake was felt over a large part of Scotland. The following details regarding this shock are taken from the *Times* of Friday, February 3:—"The shock was distinctly felt at a quarter past 5 o'clock in Perth. The tremor lasted about one minute, and consisted of five or six slight, wave-like motions from west to east. In the Breadalbane and Grantully districts of Perthshire the shock lasted six seconds. It was also felt very distinctly in Aberfeldy, Acharn, Kenmare, and Strathay. It is twenty years since these districts were similarly affected. In Strathearn two shocks were felt, the first about half past 3 o'clock, and the second about 5 o'clock. Further north, in Inverness-shire and Ross-shire, a shock was felt about 5. It was sharper and seemed to travel from south-west to south-east. The tremor in Dingwall is likened to the vibration caused by a heavy waggon passing along a road, while at Crieff it was like a very heavy body thrown to the ground. In Beauly and Strathglass people were greatly alarmed. Their houses shook, dishes fell, furniture was broken, and numbers of people rushed from their beds and out of houses without dressing. On the west coast the shock was very violent. It was also felt at Mull. From Fort William it is reported that there was a slight shock at 5 a.m, which affected the old Caledonian valley, and extended down to the line of the Moray Firth."

THE February Bulletin of Miscellaneous Information, issued from the Royal Gardens, Kew, contains a list of such hardy herbaceous annual and perennial plants as have matured seeds under cultivation in the Kew Gardens during the year 1887. "These seeds," it is explained, "are available for exchange with colonial, Indian, and foreign botanic gardens, as well as with regular correspondents of Kew. But the seeds are for the most part only available in moderate quantity, and are not sold to the general public. In the years 1885 and 1886 the list was printed as an independent publication. It has now been thought more convenient to issue it as a number of the Bulletin. Every effort is made to correctly determine the nomenclature of the plants in the list. As far as it goes, it will serve as a record of the herbaceous species cultivated at Kew. It must, however, be remembered that a considerable proportion of herbaceous plants do not mature seeds in the climate of England, and these are necessarily not included in the list."

MUCH inconvenience is caused by the fact that lists of recent additions to public libraries are not always readily accessible to persons who would like to make use of them. Readers at the Darwen Free Public Library may congratulate themselves that in their case this difficulty has been overcome. The other day the *Darwen News* printed the first instalment of a list of books which have been lately added to the collection belonging to that institution, and which are not to be found in the catalogue. Two similar instalments will follow, and afterwards lists will be given as books are purchased. If readers will take the trouble to cut out these lists and place them at the end of their copies of the catalogue, they will know exactly what works have been secured for the library. From the instalment just issued, it is obvious that the managers of the Darwen Free Public Library exercise great discretion in their choice of books, and we are glad to see that among the works selected by them science is very fairly represented.

SEVERAL correspondents have written to us about Mr. John Morison's letter, printed last week (p. 321), on what he supposed to be a case of untimely insect development. Mr. Edward Buckell, of Romsey, writes:—"Surely Mr. Morison has overlooked the fact that *Vanessa urticæ* hibernates in the imago state, selecting for that purpose houses and such other warm quarters as it can find. I have counted nine in one house. During hibernation the insect is naturally in a semi-torpid condition. As to the 'abnormal appearance' of the antennæ, I think that if Mr. Morison observes other specimens, both during the winter months and after sundown in the summer, he will find the position noted by him to be the usual one."

WE referred last week (p. 328) to M. Lancaster's work on the climate of Belgium in 1887; we are also indebted to him for an elaborate discussion of the barometer observations taken at Brussels Observatory during the fifty years 1833–82. That Observatory owes its origin to the efforts of the late L. A. J. Quetelet, President of the International Maritime Conference held at Brussels in 1853, to which Conference our own Meteorological Office owes its origin. The Annals of the Observatory contain one of the most complete series of climatological and phenological observations extant. The barometrical results, which M. Lancaster has carefully resumed, are drawn from the eye observations taken up to June 1841, and since that time from self-recording instruments, one of which is a photographic barograph of the Kew pattern. In addition to the usual monthly and annual means, the tables contain summaries of the days on which the barometer was above or below certain values, the epochs of all remarkable falls and rises, five-day and seasonal means. The mean for the whole period was 29·766 inches (not reduced to sea-level); the greatest height was 30·753 inches on January 17, 1882; and the lowest, 28·367 inches, on December 10, 1872. The mean diurnal range for the year was 0·023 inch. The diurnal and monthly variations are greatest in winter and least in summer; the highest and lowest absolute readings occur generally in the month of January.

MR. R. H. SCOTT delivered a lecture on British and Atlantic weather, at the London Institution, on the 2nd instant. After some interesting remarks on the effect of difference of height upon vapour, the dependence of our weather on the upward or downward movement of the atmosphere in cyclonic and anti-cyclonic systems, and on the cause of fogs, he discussed the utility of the present American reports in forestalling storms, based on a consideration of their movements as shown by the Atlantic Weather Charts lately published by the Meteorological

Council. These charts showed that only a small proportion of storms travelled across the Atlantic. The track of the depressions is determined by the distribution of pressure over the ocean, and of this distribution we are ignorant at the time of despatch of telegrams from America. The lecturer stated that in their present incomplete form the telegrams were of no assistance to the Meteorological Office in issuing storm warnings.

Dr. Billwiller reports the establishment of a permanent observatory on the summit of the Santis, in October last. This observatory ranks as the third in height in Europe, being at an elevation of 8200 feet, and 108 feet higher than the temporary station at the Gasthaus, on the Santis, where the observations have been taken for the last five years. The results of these observations are published in a *Neujahrsblatt*, by the scientific Society of Zürich. The lowest temperature during the five years was −9° F. on March 13, 1883, and the highest, 69°, on July 21, 1886. The prevalent winds were westerly and south-westerly, which usually occur on high mountains in these atitudes.

According to the last annual report on the Dutch East Indies, rainfall was measured at 183 stations in these possessions. The military portion of the report, the topographical survey of Java, on a scale of 1 : 200,000, is completed, and the members of the Survey have been sent to the west coast of Borneo, where a preliminary survey to join certain points already astronomically determined has been undertaken. The survey on the west coast of Sumatra will also be continued. A considerable part has already been triangulated, and 344 positions have been determined. The definitive calculation of the triangulation work of Java, on which Prof. Oudemans, of Utrecht, has been at work for five years, is not yet completed.

Recent Java journals give particulars of a remedy for coffee-leaf disease, discovered by Dr. Burck, manager of the Government Botanic Gardens at Buitenzorg, near Batavia. The specific is said not only to cure the disease, but also to prevent its recurrence. For preventive purposes, he makes use of a highly attenuated solution of chloride of iron applied to the under portion of the leaves by means of a pulverisator. The sticky nature of the solution enables it to adhere two months to the coffee-leaves. It is a powerful antidote to the *Hemileia vastatrix*. To stay the progress of the latter when it has once taken hold, a different method is employed. The coffee-leaves in which the *Hemileia* first manifests itself in the form of orange-coloured spots are at once taken in hand. Holes are pricked in the spots with a needle dipped in a strong solution of sulphuric acid, which kills all the germs of the disease in the leaf. Dr. Burck estimates the cost of the preventive specific at 2½ guilders per 133 lbs., and the healing remedy at 4 guilders. He anticipates that the price of coffee will be enhanced in consequence. The second specific in particular is said to have yielded good results and to be easy to administer. The economic value for Java of the discovery of the remedies, should they prove successful, can scarcely be over-estimated. In Ceylon the disease in the coffee-plant produced a revolution in planting; year after year the coffee crops were failures, many planters were ruined, and ultimately tea-growing took the place of coffee with results which are just now astonishing the world. But the period of transition from one staple to the other was one of economic disaster, from which perhaps Dr. Burck has saved Java.

We have received the recent issues of the *Journal of the Asiatic Society of Bengal*. Vol. lv. Part 2, No. 5, is wholly occupied by the second instalment (Rhopalocera) of the Lepidopterous insects collected in Tavoy and Siam during 1884–85, under the superintendence of Mr. Pitman, the Chief Superintendent of Telegraphs. Of this list nearly 100 species are quite new. The list is drawn up by Messrs. Elwes and L. de Nicéville. Vol. lvi. Part 2, has numerous and varied contributions. The first paper is by Mr. Blanford, on the influence of Indian forests on the rainfall. The other papers are: the changes in the density of sea-water, by S. R. Elson; notes on Indian Rhynchota, Heteroptera, Part 1, by E. T. Atkinson; new species of Ficus from New Guinea and Sumatra, by G. King, where eleven new species are spoken about; the mammals and birds collected by Captain Yate with the Afghan Boundary Commission, each species briefly described and commented on by J. Scully; the species of Loranthus indigenous to Perak, by G. King; Étude sur les Arachnides de l'Asie meridionale, by M. Eug. Simon; the differential equation of a trajectory, by H. Mukhopadhyay.

The current number of the *Folk-Lore Journal* (vol. vi. part i.) contains a most interesting collection of Aino tales and legends, made by Prof. Chamberlain, the well-known Japanese scholar. We are glad to see that he was encouraged to publish the collection by certain observations contained in a review, in these columns, of his recent monograph on the Ainos. The collection consists of fifty-four tales (a few being omitted as unfit for general publication), classified under the headings—tales accounting for the origin of phenomena, moral tales, tales of the Panaumbe and Penaumbe cycle, miscellaneous tales, and, finally, scraps of folk-lore. These were all taken down from the mouths of Ainos. The other papers in the number include a continuation of one on Irish folk-lore collected from a "Statistical Account or Parochial Survey" of that country published more than seventy years ago; and a collection of the traditions of a race as curious in its way as the Ainos, the Mentra, or aborigines of Malacca and the adjoining States.

The January number of the *Auk* announces that the affairs of the American Ornithologists' Union have considerably brightened, and that by the public spirit of some of its members the Association begins the new year free from debt. The new part also strikes us as full of vigour, and of more than ordinary interest, and it is evident that the recent exertions of the Americans in getting collections from little-known parts of the Western world, such as Texas and Northern Mexico, are being amply rewarded. The reviews are as good as ever, and some of the original papers are excellent. Mr. Sennett describes a new finch from Arizona, and gives an account of the North American species of *Peucæa*, but not one word is said respecting the "Biologia Centrali-Americana" of Messrs. Salvin and Godman, where all Mr. Sennett's facts were duly set forth a year ago. The new Arizona finch, *Peucæa ruficeps scotti*, of Mr. Sennett, was also described some months ago by Mr. Bowdler Sharpe as *Peucæa homochlamys* in the twelfth volume of the "Catalogue of Birds," but as this work has only just appeared, Mr. Sennett's name secures priority of publication. Mr. Brewster's new species from Mexico seem to rest on somewhat trivial characters, at least in the case of the small owls (*Scops*) and the *Aimophilæ*.

Amongst the subjects of special interest referred to in the report of the Smithsonian Institution for the past year is the exploration for a collection of skeletons and skins of the now almost extinct American bison or buffalo. The exploraton was very successful, a small herd being found in a wild part of Montana, from which the officers of the Institution secured a series of skins, as well as sixteen complete skeletons, and fifty-one dry skulls. The herd appears to have been completely exterminated by the settlers soon afterwards. An expedition was also despatched to the Swan Islands in the Caribbean Sea, which are said to abound in land birds in great variety, and also in large iguanas and other reptiles. The National Museum collections are extending so rapidly that the provision of additional and adequate space for their exhibition is becoming a matter of pressing importance. In 1884 the number of specimens was estimated at 1,471,000; the number is now increased by more than a million. At the beginning of the present decade there was only one curator with a few assistants; now there are thirty-one regularly organized departments and sections, under the care of twenty-six curators and numerous assistants. The work of the Ethnological Bureau in all its branches—mound explorations, general field studies, and office work—appears to proceed as vigorously as in previous years. The most important forthcoming work of the Bureau appears to be a report by Mr. E. W. Nelson, on the Eskimo of Northern Alaska. During 1886 the vocabularies of twelve Eskimo dialects were arranged in the form of a dictionary, which will form one part of his report; the other will contain chapters on Eskimo life and customs in Alaska, illustrated by photographs taken on the spot.

An elaborate review of the mineral industries of the United States during the year 1886 has just been issued by the United States Geological Survey. It is the fourth of a series of volumes entitled "Mineral Resources of the United States." The first three volumes contain the statistics from 1882 to December 31, 1885.

The U.S. Bureau of Education has issued the first of what promises to be a most interesting series of "Circulars of Information." The present Circular is by Dr. H. B. Adams, who has chosen as his subject the College of William and Mary. This College was founded in 1693 by Royal grant, and was long supported by popular legislation in Virginia. The greater part of its property was destroyed during the Civil War, and since that time the institution has been allowed to decline almost to ruin. Dr. Adams' aim, as explained in a prefatory letter, has been to discover the historical beginnings of the higher education in the South; to trace the causes of the early prosperity of William and Mary College; to show its influence upon Virginia statesmen and the Southern States, its relation to the University ideas of Jefferson and Washington, and its significance to the whole country; to point out the causes of the decline of William and Mary College; to explain the rise of the University of Virginia, and the necessity of popular support for the higher education.

Popular editions of the late Dr. Parkin's volumes—"Are Epidemics Contagious?" and "The Volcanic Origin of Epidemics" (Sampson Low)—have been published. Dr. Parkin died nearly two years ago at the age of eighty-five, and it is explained in an editorial note that "his long and strenuous life had been devoted to the study of cholera and similar epidemics." His attention was first specially directed to the subject of cholera more than fifty years ago, when he was visiting India and China. A prolonged series of observations and experiments satisfied him that "the cause of the disease was atmospheric, and that carbonic acid gas was its antidote." The editor of these volumes admits that Dr. Parkin's theories have met with comparatively limited acceptance in England. This fact he attributes in part to the comparative mildness of cholera outbreaks in England, in part to "an erroneous notion that the results of Dr. Parkin's teaching were hostile to sanitation."

Messrs. Longmans have just issued the ninth edition of Mr. William Jago's "Inorganic Chemistry, Theoretical and Practical." In this edition the paragraphs are numbered, and have side-headings. The more important statements and definitions are printed in bolder type. A number of students and teachers have pointed out to Mr. Jago that they have been using his book in preparing for the Matriculation Examination of the London University, and have been inconvenienced by its not covering the whole syllabus of that examination. Chapters have now been added to supply this want.

At the last meeting of the Society of Science of Christiania Prof. Schöyen exhibited and described four species of Lepidoptera new to the Norwegian fauna; viz. *Agrotis præcox*, L., found as larva in the Hval Islands, in the Christiania Fjord; *Asopia glaucinalis*, L., produced from larva at Christiania; *Tortrix inopiana*, Haw., from southern Aurdal; and *Cerestoma nemorella* from Christiansand. At the same meeting Prof. Blytt read a paper on the alterations of the so-called "Strandlinjer," or shore-lines, in Norway, maintaining that the changes in the division of land and sea might have been caused by an alteration in the length of day and night.

A resident in the isolated little island of Bornholm, in the Baltic, writes to a Danish journal that a curious Christmas custom is observed in that island. When the so-called "Christmas table" has been spread on Christmas Eve, a large long loaf of rye bread is laid at the upper end of it. In this loaf, before it is baked, two transverse grooves are made about 3 inches from each end. On the top of the loaf a large cheese and various articles of food are laid. This is the so-called "*Julegalt.*" It remains untouched throughout Christmas, and when the table is not in use, the cloth is gathered from the other end and laid over the "*galt.*" This curious custom is believed to have been handed down from Pagan times, the *galt* (pig) having reference to Frey's *galt* or pig "Gyldenbörste" ("Gold bristle"). Frey was the god of rain, sunshine, harvest, and general felicity.

The acclimatization of the so-called "American" trout in Norwegian waters has been very successful. Attempts are now about to be made to acclimatize black bass obtained from America.

The Danish Government has decided upon forming an oyster bank in the Limfjord, in Jutland, and has despatched the inspector of the Danish fisheries to Norway to obtain all possible information respecting the artificial banks formed in that country during the last few years.

The manner in which the spruce and pine forests of Norway are being exterminated, is becoming so serious that the Government is called upon to put a stop, by legislation, to the deforestation of the country. At present there is no law to prevent the purchaser of a forest from felling everything, even down to the tiniest saplings. It is urged by forest officials that trees under a certain diameter should not be permitted to be cut, and that the branches of the trees should not be left in the forest (as is now nearly always done), because they stifle the growth of the young trees. Apart from the wanton exhaustion of this commercial wealth, it is maintained that wholesale felling has the effect of changing the climate in the forest localities.

The strict preservation of the eider fowl on the south-east coast of Sweden during recent years has had the effect of greatly augmenting the number of these valuable birds. The penalty for killing one is very heavy, and informers receive a considerable reward.

During the present winter term there are 26,945 German students at the German Universities. Of this number 5791 study theology, 5769 law, 6650 medicine, and 8735 belong to the Philosophical Faculty. 1644 students are foreign. The Vienna University has 238 theologians, 2569 law students, 1565 medical students, and 634 of the Philosophical Faculty. In Graz there are 1305 students, and in Innsbruck 863. Prague has 3805, Cracow 1234, Lemberg 1112, and Czernowitz 259. At Berne University there are 637 students, 51 theologians, 158 law students, 287 medical students, and 141 physical science students. At Zürich there are 70 female students, 40 being medical.

THE *Bulletin Pharmaceutique* states that a new remedy for Phylloxera has been discovered by M. Laffon, of Capendu, and it has proved successful. It consists of a weak solution of nitrate of mercury.

THE additions to the Zoological Society's Gardens during the past week include a Red-winged Parrakeet (*Aprosmictus erythropterus*); eight Peaceful Doves (*Geopelia tranquilla*) from Australia, presented by the Hon. Stormont Finch-Hatton; a Fulmar Petrel (*Fulmarus glacialis*) from Norfolk, presented by Mr. H. M. Upcher, F.Z.S.; a Jardine's Parrot (*Pæocephalus gulielmi*) from West Africa, received in exchange.

OUR ASTRONOMICAL COLUMN.

THE ROYAL ASTRONOMICAL SOCIETY'S MEMOIRS.—The first part of vol. xlix. of the Memoirs of the Royal Astronomical Society has just been published, and contains a new General Catalogue of nebulæ, by Dr. J. L. E. Dreyer. Sir John Herschel's General Catalogue, published in the Philosophical Transactions for 1864, was almost entirely founded upon his own and his father's observations, and hence, since several observers have devoted themselves to the work of searching for nebulæ since that catalogue was prepared, the number known to us has been very largely increased. D'Arrest's great work on nebulæ, which appeared three years later than the General Catalogue, gave the means of correcting many of its positions, and hence Dr. Dreyer had been induced as early as 1876 to compile a supplement to the General Catalogue, which he published in the Transactions of the Royal Irish Academy in 1878 (vol. xxvi.), containing a list of corrections to it, and a catalogue of recently-discovered nebulæ. In 1886, Dr. Dreyer presented a second similar supplement—in which the later discoveries of Messrs. Stephan, Swift, Ormond Stone, and other observers had been incorporated—to the Council of the Royal Astronomical Society; but the Council, considering that the General Catalogue was practically out of print, and that the use of three catalogues and two lists of corrections would be very inconvenient, proposed to Dr. Dreyer that he should prepare from the whole of his materials a single new General Catalogue. This work he has now carried out, and the present catalogue contains 7840 objects, the positions of which have been as thoroughly corrected and revised as the materials available permitted. The epoch of the first General Catalogue, and of D'Arrest's final positions—1860—has been retained, as it is close to the epochs of the great star-charts of Argelander, Schönfeld, Chacornac, and Peters, and nearly all the modern micrometric observations of nebulæ are referred to an epoch but little later. The precessions have been given for 1880, as done by Sir John Herschel, and the descriptions have been carefully revised. The work also contains an index to published figures of nebulæ and clusters, and an appendix giving the places of several new nebulæ discovered by Prof. Safford and Mr. Swift, but published too late to be incorporated in the catalogue itself. These are added that the volume may contain a complete record of all nebulæ of which the places have been published up to December 1887.

PUBLICATIONS OF DUNSINK OBSERVATORY.—The sixth part of the observations of the Observatory of Trinity College, Dublin, at Dunsink, has just been published, and contains the separate results reduced to 1885·0, and the mean places for 1012 southern stars observed with the transit circle by Dr. Dreyer, the late, and Mr. Rambaut, the present, Assistant Astronomers. These stars are nearly all in the Southern Durchmusterung Belt, between S. Decl. 2° and 23°, and were suggested for observation by Prof. Schönfeld on account either of their proper motion or of discordances between their places as given in different catalogues. A few other stars were observed either at the request of Prof. Peters or Dr. Auwers. The work had been commenced by Dr. Dreyer in September 1881, who continued it until his appointment to the Armagh Observatory in May 1882, and Mr. Rambaut took it up, on succeeding to Dr. Dreyer's position, in November of the same year. Mr. Rambaut gives the probable error of a single observation—most of the stars were observed only once—as ± 0·065s. in R.A., ± 0″·864 in Decl.; the faintness of the objects and their low altitude at meridian passage making observation somewhat difficult. A plate at the end of the volume shows a portion of one of the chronograph sheets, and illustrates a convenient method of making notes whilst at the telescope by sending special signals to the chronograph.

ROUSDON OBSERVATORY.—Astronomical observations have been steadily carried on during the past year at Mr. Peek's private observatory, Rousdon, Lyme Regis. The principal work undertaken, besides transit observations for time, has been the observation of twenty long-period variable stars. It is proposed, so soon as any star has been observed over several complete periods, to publish a memoir with plates showing the variations in the light curve. The record of the Observatory shows that there were 165 good observing nights in 1887, as against 146 in 1886.

β DELPHINI.—Mr. J. E. Gore published two years ago elements for this difficult and interesting binary (NATURE, vol. xxxiii. p. 518), in which he gave the period as 30·91 years, a value fairly corresponding to that found by Dubiago a couple of years earlier, viz. 26·07. Sig. Celoria having been placed in possession of Prof. Schiaparelli's observations made in 1875 and 1886–87, and those of Engelmann made in 1885 and 1886, has re-investigated the orbit, and deduced elements differing widely from these two earlier sets, particularly in the period, which he finds to be a little short of seventeen years (*Astr. Nachr.* No. 2824). If this last orbit be correct, the star has already been watched through nearly a complete revolution. There is, however, a considerable divergency between the recent observations of Schiaparelli and Engelmann, and those of the latter would accord better with a longer period. It is, therefore, much to be desired that astronomers who possess sufficient optical power should give early and careful attention to this star. The following are Sig. Celoria's complete elements:—

$T = 1868{\cdot}850$ ... $\epsilon = 0{\cdot}09622$
$\Omega = 10^\circ{\cdot}938$ ... $a = 0''{\cdot}46000$
$\lambda = 220{\cdot}952$ ... $P = 16{\cdot}955$ years
$\gamma = 61{\cdot}582$

OLBERS' COMET.—The following ephemeris for Berlin midnight is in continuation of that given in NATURE, vol. xxxvii. p. 234:—

1888.	R.A.			Decl.			Log *r*.	Log Δ.	Brightness.
	h.	m.	s.	°	′				
Feb. 11	17	46	35	6	5·7	S.	0·3320	0·3974	0·29
13		48	57	6	17·2				
15		51	15	6	28·4		0·3394	0·3970	0·28
17		53	28	6	39·3				
19		55	36	6	50·0		0·3477	0·3962	0·27
21		57	39	7	0·4				
23		59	36	7	10·7		0·3558	0·3951	0·26
25	18	1	28	7	20·8				
27		3	15	7	30·7	S.	0·3638	0·3936	0·25

The brightness on 1887 August 27 is taken as unity.

NEW MINOR PLANET.—A new minor planet, No. 272, mag. 13, was discovered by M. Charlois, of the Nice Observatory, on February 4.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1888 *FEBRUARY* 12–18.

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on February 12

Sun rises, 7h. 22m.; souths, 12h. 14m. 28·6s.; sets, 17h. 7m.: right asc. on meridian, 21h. 42·4m.; decl. 13° 46′ S. Sidereal Time at Sunset, 2h. 36m.

Moon (New, February 12, 0h.) rises, 7h. 47m.; souths, 12h. 41m.; sets, 17h. 43m.: right asc. on meridian, 22h. 9·2m.; decl. 13° 19′ S.

Planet.	Rises.		Souths.		Sets.		Right asc. and declination on meridian.				
	h.	m.	h.	m.	h.	m.	h.	m.	°	′	
Mercury	7	54	13	19	18	44	22	47·5	7	39	S.
Venus	5	37	9	41	13	45	19	8·2	21	38	S.
Mars	22	59*	4	20	9	41	13	46·6	8	18	S.
Jupiter	2	27	6	42	10	57	16	9·1	20	4	S.
Saturn	14	51	22	46	6	41*	8	15·4	20	22	N.
Uranus	22	4*	3	37	9	10	13	3·9	6	4	S.
Neptune	10	33	18	13	1	53*	3	41·6	17	55	N.

* Indicates that the rising is that of the preceding evening and the setting that of the following morning.